

IN THE CLAIMS

1. (currently amended) A device for drilling a tunnel in a bone and forming expansion regions in a ~~regions in a~~ regions in the tunnel having a given lateral dimension ~~in a~~ in a bone, comprising:
~~an elongate body having and having an axis; adapted to fit through the tunnel;~~
~~a head, provided on said body and having outer dimensions not extending trans axially to said body by an amount that would cause it to substantially impact the tunnel diameter in a first configuration and having an outer dimension that does impact the tunnel diameter in a second configuration;~~
a head mounted at a distal end of the body;
a sleeve including an inner lumen adapted to accommodate the body with the head protruding from a distal end of the sleeve and adapted to fit through the tunnel; and
~~wherein said head is rotatable and wherein said head is adapted to widen said tunnel in said bone by at least 5% in conjunction with said rotating;~~
characterized by having two operational modes, a tunnel drilling mode in which the sleeve and the head are concentric and a reaming mode in which the sleeve and the head are eccentric;
wherein the drilling mode is suitable for drilling a tunnel in a bone and the reaming mode is suitable for forming expansion regions in a tunnel.

2-6 (cancelled)

7. (currently amended) A device according to ~~claim 4~~ claim 1, wherein said head is adapted to be rotationally locked to said sleeve.
8. (currently amended) A device according to ~~claim 4~~ claim 1, wherein said head has a rotationally limited motion relative to said sleeve, ~~between 10 and 350 degrees of rotation.~~
9. (currently amended) A device according to ~~claim 4~~ claim 1, comprising an interlock which selectively rotationally locks said body to said sleeve.
10. (original) A device according to claim 9, wherein said interlock includes a plurality of selectable interlocking settings.

11. (original) A device according to claim 9, wherein said interlock is directionally selective in at least two positions thereof preventing relative rotational motion one only in one rotation direction and one only in an opposite rotation direction.

12. (currently amended) A device according to ~~claim 4~~ claim 1, wherein said sleeve has a lumen sized to receive said body and wherein said lumen is off-axis of an axis of said sleeve.

13-17. (cancelled)

18. (currently amended) A device according to claim 1, wherein said head is adapted to ~~crush compact~~ cancellous bone in said tunnel to cause said widening expansion regions.

19-23. (cancelled)

24. (currently amended) A device according to ~~claim 22~~ claim 1, wherein said head is adapted to selectively drill or widen-ream depending on a rotation direction of said head.

25. (currently amended) A device according to ~~claim 22~~ claim 1, wherein said head is adapted to selectively drill or widen-ream depending on an eccentricity of rotation of said head.

26-28. (cancelled)

29. (original) A device according to claim 1, comprising a plurality of depth indicating axial markings.

30. (original) A device according to claim 1, comprising an axially positionable depth limiter.

31. (cancelled)

32. (currently amended) A head adapted for drilling a tunnel and for widening an existing tunnel, comprising:

(a) at least one drill cutting edge arranged for cutting bone in a forward pointing direction; and

(b) at least one bone cutting edge arranged for cutting the bone transverse to the forward pointing direction and arranged in a general axial direction;

wherein the head can be set in a first configuration and a second configuration;

wherein the first configuration positions the head so that the bone cutting edge does not cut transverse to the forward pointing direction; and

wherein the second configuration positions the head so that the bone cutting edge cuts transverse to the forward pointing direction.

33. (original) A head according to claim 32, comprising at least a second substantially axially arranged bone cutting edge for adapted for cutting at an opposite rotation direction of said head than a rotation direction for which said head drills said tunnel.

34. (original) A head according to claim 32, wherein said head is mounted off-center on an elongate rod.

35. (original) A head according to claim 32, wherein said head is cannulated.

36. (currently amended) A method of fixating soft material tissue to bone, comprising:

(a) forming a tunnel in said bone;

(b) forming a radial expansion an expansion region in at least a part an inner segment of said tunnel;

(c) inserting soft material tissue into said expansion region via said tunnel; and

(d) fixating employing a fixation material capable of setting to fixate said soft tissue in said expansion region of said tunnel.

37. (currently amended) A method according claim 36, wherein said soft material tissue comprises a ligament or a tendon or a ligament or a tendon replacement graft.

38-51 (cancelled)

52. (currently amended) A method according to claim 36, wherein a same tool is employed for the forming a tunnel and for the forming an forming of the expansion region comprise using a same tool for drilling and expansion.

53-61 (cancelled)

62. (currently amended) A method according to claim 37, wherein said ligament is an anterior cruciate ligament (ACL).

63-64. (cancelled)

65. (currently amended) A method of pre-treating graft material to facilitate fixating to bone, comprising:

- (a) providing a graft material suitable to be used for a ligament or tendon; and
- (b) increasing a cross-section of said graft at at least one end thereof by adhering a flowable material capable of setting to a hardened condition to said graft.

66-67. (cancelled)

68. (currently amended) A method according to claim 65, wherein increasing a cross-section further comprises folding said graft.

69. (cancelled)

70. (currently amended) A method according to claim 65, wherein increasing a cross-section comprises dipping said graft material in a settable material.

71-72. (cancelled)

73. (new) A kit for fixation of soft tissue to bone comprising:

- (a) a drill adapted for formation of a tunnel in a bone;
- (b) a reamer adapted to widen a portion of the tunnel;
- (c) an insertion tool adapted to engage a portion of a soft tissue and convey the engaged portion through the tunnel to the widened portion;
- (d) a quantity of setting material; and
- (e) an applicator adapted to deliver at least a portion of the setting material to the portion of the soft tissue in the widened portion of the tunnel.

74. (new) A kit according to claim 73, wherein the drill and the reamer are supplied as a single device.

75. (new) A kit according to claim 73, wherein the insertion tool participates in the delivery of the at least a portion of the setting material.

76. (new) A kit according to claim 73, wherein the setting material is biodegradable.

77. (new) A graft insertion tool, the tool comprising:

(a) a body characterized by a proximal end and a distal end, the distal end adapted for insertion into a tunnel drilled in a bone;

(b) a distal mechanism adapted to engage a portion of a soft tissue and conveying the engaged portion through the tunnel to a widened portion thereof; and

(c) a delivery mechanism adapted to deliver a setting material to the portion of the soft tissue in the widened portion of the tunnel.

78. (new) A method according to claim 68 wherein said folding includes tying.

79. (new) A device according to claim 1, wherein said head is adapted to form the expansion region, the expansion region characterized by a larger diameter than the diameter of the tunnel.

80. (new) A device according to claim 1, wherein one of the two operational modes is selected automatically.

81. (new) A device according to claim 80, wherein one of the two operational modes is selected by axial motion of the head.

82. (new) A method according claim 36, wherein said fixation material comprises a bone void filler.

83. (new) A method according claim 36, wherein said fixation material comprises a bone cement.

84. (new) A method according claim 36, wherein said fixation material comprises a material which expands when brought in contact with a humid environment.

85. (new) A method according claim 36, wherein said fixation material comprises biodegradable material.